

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

2016-1706, -1707, -1710, -1712

ULRATEC, INC.,

Appellant,

v.

CAPTIONCALL, LLC,

Appellee,

**MICHELLE K. LEE, DIRECTOR,
U.S. PATENT AND TRADEMARK OFFICE; UNITED STATES,**

Intervenors.

Appeal from the Patent Trial & Appeal Board, U.S. Patent Office,
Nos. IPR2013-00540, IPR2013-00541, IPR2013-00544, IPR2013-00545

CORRECTED RESPONSE BRIEF OF CAPTIONCALL, LLC

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UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

ULTRATEC, INC.

v.

CAPTIONCALL, LLC

Case No. 2016-1706, -1707, -1708, -1709, -1710, -1712, -1713, -1715, -2366

CERTIFICATE OF INTEREST

Counsel for the:

☐ (petitioner) ☐ (appellant) ☐ (respondent) ☒ (appellee) ☐ (amicus) ☐ (name of party)

CaptionCall, LLC

certifies the following (use "None" if applicable; use extra sheets if necessary):

1. Full Name of Party Represented by me	2. Name of Real Party in interest (Please only include any real party in interest NOT identified in Question 3) represented by me is:	3. Parent corporations and publicly held companies that own 10 % or more of stock in the party
CaptionCall, LLC	Sorenson Communications, Inc.	Sorenson Holdings, LLC

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (**and who have not or will not enter an appearance in this case**) are:

Pratik A. Shah, Michael P. Kahn, (formerly) Emily C. Johnson, Ruben Munoz, Z.W. Julius Chen and Rachel J. Elsbey of Akin Gump Strauss Hauer & Feld LLP; Fred I. Williams, Todd E. Landis and Eric J. Klein of Vinson & Elkins LLP; Brian W. Oaks, Bryant C. Boren, Jr., Harper S. Batts and Joseph D. Gray of Baker Botts LLP

08/18/2016

Date

/s/ Pratik A. Shah

Signature of counsel

Please Note: All questions must be answered

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Printed name of counsel

cc: All Counsel of Record

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STATEMENT OF RELATED CASES

Pursuant to Federal Circuit Rule 47.5, Appellee CaptionCall, LLC states that no other appeals from the *inter partes* review proceedings consolidated on appeal (Nos. 16-1706, -1707, -1710, -1712) were previously before this or any other appellate court. The above-captioned consolidated appeals, and two other sets of consolidated appeals pending before this Court (Nos. 16-1708, -1709, -1715, and Nos. 16-1713, -2366), have been deemed companion cases and assigned to the same merits panel. The patents-at-issue in the consolidated sets of appeals are also the subject of parallel infringement litigation, *Ultratec, Inc. v. Sorenson Commc'ns, Inc.*, No. 3:13-cv-00346 (W.D. Wis.), where a verdict of infringement against CaptionCall and its parent company (Sorenson Communications, Inc.), as well as the district court's consideration of post-verdict motions, have been stayed pending resolution of the consolidated sets of appeals.

In addition, this Court has deemed related Appellant Ultratec, Inc.'s consolidated appeals (Nos. 17-1209, -1210) arising out of two *inter partes* review proceedings (IPR2015-00636, -00637), and stayed those appeals pending resolution of this appeal. Parallel infringement litigation, *Ultratec, Inc. v. Sorenson Commc'ns, Inc.*, No. 3:14-cv-00847 (W.D. Wis.), is also stayed pending final resolution of those *inter partes* review proceedings.

Finally, a pending *inter partes* review proceeding (IPR2015-01889) may be directly affected by the Court's decision in this appeal. Parallel infringement litigation, *Ultratec, Inc. v. Sorenson Commc'ns, Inc.*, No. 3:15-cv-00563 (W.D. Wis.), is stayed pending final resolution of that *inter partes* review proceeding.

STATEMENT OF ISSUES ON APPEAL

- I. Whether the Patent Trial and Appeal Board abused its discretion in admitting the testimony of CaptionCall's expert.
- II. Whether the Patent Trial and Appeal Board properly construed "trained to the voice of the call assistant" under the broadest-reasonable-interpretation standard, and whether substantial evidence supports the Board's finding that the Ryan prior art reference discloses that limitation.
- III. Whether substantial evidence supports the Patent Trial and Appeal Board's findings in favor of obviousness.
- IV. Whether substantial evidence supports the Patent Trial and Appeal Board's findings on secondary considerations of nonobviousness.
- V. Whether *inter partes* review is unconstitutional.

INTRODUCTION

Appellant Ultratec, Inc.’s appeal—the first of three consolidated appeals deemed related by this Court—concerns a family of Ultratec patents that claim telecommunications technologies directed primarily to use by deaf or hard-of-hearing persons. Virtually every feature claimed in the Ultratec patents at issue, however, was disclosed in the relevant universe of prior art or otherwise rendered obvious by that prior art. As a result, following multiple *inter partes* reviews initiated by Appellee CaptionCall, the Patent Trial and Appeal Board found the challenged patent claims to be unpatentable.

On appeal, Ultratec takes aim at an array of fact-laden Board findings, ranging from the admissibility of expert testimony to various factual predicates underlying its obviousness analysis. All of those record-based attacks are built upon blinkered characterizations of the law and evidence. As to claim construction, Ultratec pays lip service to the broadest-reasonable-interpretation standard but offers an exceedingly *narrow*—and certainly not the *broadest reasonable*—construction of the claim limitation in dispute. To the extent Ultratec asserts pure legal error, the arguments advanced—including that the Board’s factual findings should be reviewed for something more demanding than substantial evidence and that *inter partes* reviews are unconstitutional—are squarely foreclosed by this Court’s precedent.

In the end, the Board’s thorough and well-reasoned decisions—spanning approximately 300 pages in total (including on rehearing)—demonstrate that it carefully considered the parties’ arguments and faithfully applied the law to the evidence presented. That Ultratec disagrees with the Board’s reading of the myriad prior art sources and the accompanying expert testimony does not warrant second-guessing—let alone reversal—of the Board’s amply supported decisions. This Court should reject Ultratec’s thinly veiled attempts to re-try those issues in this forum.

STATEMENT OF THE CASE

A. Factual And Technological Background

1. *The Ultratec Patents*

This appeal involves four related patents assigned to Ultratec: U.S. Patent No. 6,233,314, Appx78-84; U.S. Patent No. 5,909,482, Appx3688-3695; U.S. Patent No. 8,213,578, Appx7428-7442; and U.S. Patent No. 6,594,346, Appx11228-11236 (collectively, the “Ultratec patents”).¹

The Ultratec patents are directed to the field of telecommunications technology and, in particular, to assisting individuals with hearing impairment

¹ The ’346 patent is a continuation-in-part of the ’314 patent, which is a continuation of the ’482 patent. The ’578 patent is part of a set of patents (at issue in other consolidated appeals) that are a continuation-in-part of the ’346 patent. *See, e.g.*, Appx7428.

(among others) communicate over a telephone network. *See, e.g.*, Appx3691, '482 patent col. 1 ll. 14-18. For many years, such individuals had used “telecommunication device[s] for the deaf” (TDD)—commonly a keyboard, display, and modem coupled to a telephone line—to converse with one another over telephone lines through text. *Id.* at col. 1 ll. 19-55. To enable communication between TDD users and non-TDD users, telephone companies developed “relay” services that mediate those conversations by providing voice-to-text and/or text-to-voice translation. *Id.* at col. 1 l. 55 to col. 2 l. 8. That could be accomplished, for example, by a human operator or “call assistant” communicating by voice with a hearing user, while also communicating by TDD with a hearing-impaired user. *Id.* As depicted in figure 1 of the '482 patent, Appx3688:

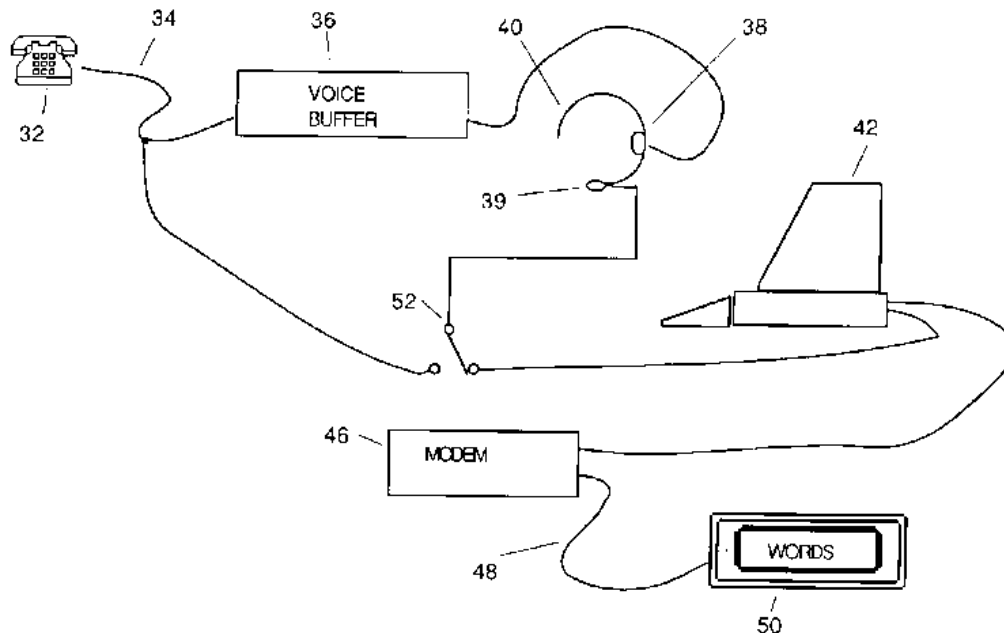


FIG. 1

The Ultratec patents claim various methods, systems, and devices that purport to improve the use and effectiveness of TDDs and relays over the prior art. The claims at issue describe variations on a “captioned telephone service” wherein a call assistant “re-voices” (*i.e.*, repeats) a hearing user’s spoken words into a microphone connected to a computer that uses voice recognition software, which converts the words into text for transmission and display to a hearing-impaired user’s TDD. *See, e.g.*, Appx3691, ’482 patent col. 2 ll. 41-67. At the time of patenting, voice recognition software capable of “translat[ing] to digital text spoken words of a user at the normal speeds of human communication in conversation when operating on conventional modern personal computers” (known as “Naturally Speaking”) was “available commercial[ly]” from a company called Dragon Systems. Appx3693, col. 5 ll. 36-57. Voice recognition software could be either speaker-dependent, meaning that the software recognizes particular voice characteristics through training, or speaker-independent, meaning that no training is involved.

Claim 1 of the ’482 patent—the parent of the patents involved in this case and the related appeals—is exemplary:

1. A method of operating a relay system using a call assistant to facilitate communication between a deaf person and a hearing person by telephone comprising the steps of

transmitting the voice of the hearing person when speaking to the ear of the call assistant;

the call assistant speaking in voice the same words that the call assistant hears spoken by the hearing person into a microphone connected to a digital computer;

the digital computer using voice recognition computer software trained to the voice of the call assistant to translate the words of the voice spoken by the call assistant into a digital text message stream containing the words spoken by the call assistant;

transmitting the digital text message stream created by the computer by telephone connection to a telecommunication device within sight of the deaf person; and

the telecommunication device displaying in visually readable text the words in the digital text message stream.

Appx3694, col. 8 ll. 4-22.

The claimed variations on this general construct concern: the addition or subtraction of certain claim steps, such as whether text must be displayed or voice must be transmitted along with the text; the manner in which the relay and the conversing parties are connected, including the number of telephone lines used; the requirement that devices include particular hardware (*e.g.*, microphone, speaker, modem, digital computer, visually readable display), which in various combinations may comprise a “captioned telephone device”; and the capability to communicate over a cellular or wireless connection, or using particular protocols (such as an internet protocol).

2. *The Prior Art*

Five prior art references are at issue in this appeal.²

Ryan: U.S. Patent No. 5,809,112 (“Ryan”), Appx683-690, discloses a telecommunications system that uses a “relay interface” to facilitate communication between a standard telephone and a TDD. Ryan seeks to improve the accuracy of text transmitted to a TDD. Appx686, col. 2 ll. 34-58. In addition to teaching a method of automatically and manually correcting errors made by typing call assistants, Ryan instructs that voice recognition software may be applied either directly to the voice of the hearing user (thereby automating the relay function) or to a call assistant re-voicing words spoken by the hearing user. Appx687, col. 4 ll. 19-24. In the latter scenario, Ryan teaches that the use of software “specifically designed to recognize the voice of particular relay agents” may “improve[]” the “accuracy of the relay service *** by having one of these agents listen to the caller and repeat the voice message into a terminal adapted to convert the agent’s voice message into a data message.” *Id.* at col. 4 ll. 33-38.

Alshawi: U.S. Patent No. 5,815,196 (“Alshawi”), Appx11841-11846, discloses a videophone that provides continuous speech-to-subtitle translation for people speaking different languages, as well as a method for converting audio into

² On appeal, Ultratec no longer disputes whether certain references constitute prior art.

translated subtitles that are overlaid onto video. The invention employs a “conventional speech recognizer which converts human speech to text” and a “conventional text-based machine translation system which converts text in one natural language to text in another natural language”—both of which are well known in the art—to facilitate the simultaneous output of audio in the original language, video of the speaker, and subtitle translations to the viewer. Appx11844-11845, col. 2 l. 29 to col. 3 l. 53.

McLaughlin: U.S. Patent No. 6,181,736 B1 (“McLaughlin”), Appx8130-8153, discloses a simultaneous voice and data (“SVD”) modem used to facilitate communication with a relay service for the hearing impaired. Among the many features taught by McLaughlin is the ability of a hearing-impaired user, operating a device with two SVD modems, to answer a telephone call on one telephone line and at the same time use a second telephone line to send SVD communications to a relay. Appx8147-8149, col. 30 l. 13 to col. 33 l. 54. Through that arrangement, the voice of the caller on the first line is passed over the second line to the relay. Simultaneously over that same second line, the relay can cause a voice-to-text translation of the caller’s statements to appear on the device’s display; the hearing-impaired user can type a response to the relay; and the relay may return a text-to-voice translation of the typed response to the device. The device then passes the text-to-voice translation to the caller over the first line. The conversation between

the caller, the relay, and the hearing-impaired user is “full duplex,” meaning that the voice caller and the hearing-impaired user may comment or interrupt each other at the same time. Appx8148, col. 31 ll. 41-62.

McLaughlin also teaches a feature for translating voice messages left for deaf persons into text. McLaughlin acknowledges that “[a] technique in this regard is computerized voice-to-text translation (speech recognition)” applied directly to the spoken words of the caller. Appx8145, col. 26 ll. 59-60.

Wycherley: U.S. Patent No. 5,163,081 (“Wycherley”), Appx659-672, describes the use of “Automatic Speech Recognition” for reducing the amount of time a human “attendant” must be involved in a TDD call mediated by a relay. Wycherley teaches that an “Automatic Speech Recognition” unit may be “arranged to recognize particular words,” including through “speaker dependent speech recognition.” Appx664, col. 4 ll. 35-56; *see id.* at col. 3 ll. 59-60. When the system detects excessive errors in the automatic translation, an attendant intercedes by “request[ing] that the speaker repeat the substance of his or her response,” which the attendant types for transmission to a TDD. Appx665, col. 5 ll. 1-53.

Yamamoto: *New Applications of Voice Recognition* (hereinafter “Yamamoto”), Appx696-700, is a publication by Seiichi Yamamoto and Masanobu Fujioka presented and publicly distributed at a conference of the Acoustical Society of Japan. Yamamoto describes “active research into applications of voice

recognition technologies” and concludes that “[v]oice-recognition systems, voice recognition boards, and voice-recognition software, and the like, have arrived at a usable state” and are “commercially available.” Appx697. Among the tested applications of voice recognition summarized, Yamamoto recounts the use of a “switchboard extension reception system” for automatically forwarding calls upon spoken request. Appx698-699. The system “passed through research and development of a discrete word recognition system and a continuous voice recognition system using a limited automaton grammar” and became “a continuous speech recognition system driven by a context-free grammar.” Appx698 (footnotes omitted).

Yamamoto also discloses an “operator assistance system” that allows international callers to seek information about such calls from an operator. Appx699. At the time of presentation, the authors reported that “[w]hat is being researched as a preliminary step is an operator assistance system, where there is voice recognition of an operator repeating the question from the user to reduce the time for accessing a database, targeting an increase in efficiency in operations.” *Id.* Intermediate results suggested an increase in efficiency and supported an effort “underway *** to reduce the number of unknown words” by expanding the “initial[] *** lexicon” beyond 1600 words. *Id.*

B. Procedural History

1. Institution of Inter Partes Review

CaptionCall filed four petitions for *inter partes* review—one for each patent implicated in this consolidated appeal—asserting unpatentability on anticipation and obviousness grounds based on the prior art references just discussed. In support of each petition, CaptionCall included a declaration by its technical expert, Benedict Occhiogrosso. Ultratec declined to file preliminary responses, and the Board instituted reviews on the following grounds:

- IPR2013-00540 (claims 1-2 of the '314 patent): whether the claims are anticipated by Ryan and obvious over Wycherley and Yamamoto. Appx6.
- IPR2013-00541 (claims 1-15 of the '482 patent): whether claims 1 and 5 are anticipated by Ryan and obvious over Wycherley and Yamamoto, and whether the remaining claims are obvious over Wycherley, Yamamoto, and other prior art references not relevant here. Appx3594-3595.
- IPR2013-00544 (claims 7-11 of the '578 patent): whether Claim 7 is anticipated by Ryan and obvious over Wycherley and Yamamoto, and whether claims 7-11 are obvious over Ryan and McLaughlin. Appx7354-7355.

- IPR2013-00545 (claims 1-2 of the '346 patent): whether the claims are obvious over Ryan and Alshaw. Appx11173.

Although the Board undertook claim construction of certain terms, it did not provide an initial construction of the “software trained to the voice of the call assistant” limitation found in every challenged claim (except claim 2 of the '346 patent). *See* Appx128-131, Appx3768-3775, Appx7516-7520, Appx11310-11316.

2. *Final Written Decisions*

After the submission of additional expert declarations and a consolidated hearing, the Board found all of the challenged claims unpatentable in four separate final written decisions. Appx57, Appx3668, Appx7406, Appx11210.

a. IPR2013-00540

The Board found claims 1-2 of the '314 patent anticipated by Ryan and obvious over Wycherley and Yamamoto. Appx57.

As an evidentiary matter, the Board denied Ultratec's motion to exclude the expert testimony of Occhiogrosso. Appx15-19. Applying this Court's precedent, the Board held that Occhiogrosso's thirty-plus years of experience made him qualified to testify on the field of telecommunications technology—the field of art specified by the patents. Appx18-19. The Board declined to limit the field of art to a particular subset of individuals (*i.e.*, the hearing impaired) who tend to use the more broadly applicable technology, Appx17-18, and explained that any questions

about Occhiogrosso's specific expertise went to the weight of his testimony and not its admissibility, Appx19.

On the merits, the Board construed the "software trained to the voice of the call assistant" limitation. Appx10-12. Applying the broadest-reasonable-interpretation standard, the Board refused Ultratec's invitation to "limit[] *** training to the voice of one and only one call assistant" or to "preclude voice recognition software that is designed or built in advance of implementation at the source code level to the voice pattern of a call assistant." Appx12. The Board observed that the specification discloses software "trained to the voice *pattern* of the call assistant" and that the specification "does not indicate when or how the training occurs." Appx11.

Turning to the prior art, the Board found the '314 patent claims anticipated by Ryan. Appx20-34. Relying in part on Occhiogrosso's testimony, the Board read Ryan's description of software "specifically designed to recognize the voice of particular relay agents" to disclose the "trained to the voice of the call assistant" limitation of the claims. Appx30-32. The Board declined to draw a distinction between designed software and trainable software, and held that in any event Ryan discloses "training during software design." Appx31. The Board also determined that limiting Ryan's designed software as "written specifically for a group of

people” would be inconsistent with evidence of the state of the art at the time of invention. Appx32.

The Board additionally held the ’314 patent claims obvious based on the combination of Wycherley and Yamamoto. Appx34-57. The Board reasoned that it would have been natural to combine Wycherley’s system, in which a typing call assistant intervenes when trained voice recognition software applied to a caller produces excessive errors, with Yamamoto’s system, in which an operator repeats an international-call query. Appx44-53. Citing Occhiogrosso’s testimony, the Board explained that the combination of those references’ teachings would have been motivated by the manifest ability to “increase the efficiency of operator-assisted telephone services.” Appx47-48.

The Board emphasized that its ultimate determination of unpatentability was based on “the totality of the evidence submitted, including objective evidence of nonobviousness.” Appx54. Because the opinion proffered by Ultratec’s expert Paul Ludwick—that the claimed technology drove the commercial success of Ultratec’s captioned telephone service and telephone devices marketed under the “CapTel” name—was anecdotal and lacked supporting facts or data, however, the Board assigned it “little probative value.” Appx56-57. The Board therefore concluded: “When we balance [CaptionCall’s] evidence of obviousness against

[Ultratec's] asserted objective evidence of nonobviousness, we determine that a preponderance of the evidence supports [CaptionCall's] position[s]." Appx57.

b. IPR2013-00541

The Board held the '482 patent claims unpatentable. Appx3666-3667. The Board again rebuffed Ultratec's attempt to exclude Occhiogrosso's testimony, Appx3608-3612, and construed the "trained to the voice of the call assistant" limitation to encompass groups of call assistants and software trained before or after coding, Appx3600-3602. The Board then found Ryan to anticipate claims 1 and 5 for the same reasons applicable to the '314 patent discussed above. Appx3613-3627. A similar analytical overlap was present in the Board's obviousness analysis of claims 1-15 in view of Wycherley, Yamamoto, and (as necessary) other prior art references disclosing particular claim elements not at issue here. Appx3628-3666.

c. IPR2013-00544

The Board, applying the same reasoning summarized above, concluded that (i) Occhiogrosso's testimony was admissible, Appx7366-7370; (ii) Ultratec's view of the training limitation found in the claims was narrower than the broadest reasonable construction, Appx7363-7365; and (iii) claim 7 of the '578 patent was both anticipated by Ryan, Appx7371-7381, and obvious over Wycherley and Yamamoto, Appx7381-7396. The Board also determined that claims 8-11 were

obvious over Ryan and McLaughlin. As pertinent here, the Board credited Occhiogrosso's testimony that it would have been obvious to a person of ordinary skill in the art to combine McLaughlin, which teaches all of the limitations of claims 8-11 except the relay re-voicing element, with Ryan's disclosure of such a relay. Appx7402-7406.

d. IPR2013-00545

After admitting Occhiogrosso's testimony, Appx11185-11189, and rejecting Ultratec's construction of the training limitation, Appx11177-11180, the Board held the '346 patent claims obvious over Ryan and Alshawi, Appx11210. Ryan's disclosure of a telecommunications relay system and Alshawi's disclosure of continuous speech-to-subtitles language translation service, the Board explained, together teach or suggest the technology claimed in the '346 patent. Appx11190-11203. The Board concluded that a person of ordinary skill in the art would have been motivated to combine the relevant teachings from those references in light of their common goal of improving the accuracy of transmitted communications. Appx11203-11206.

3. Denial of Requests for Reconsideration

Ultratec filed rehearing requests in each proceeding, and the Board denied each request. Four of the Board's rulings are at issue here, the first two of which cut across all four rehearing proceedings.

First, the Board reaffirmed its construction of “trained to the voice of the call assistant” under the broadest-reasonable-interpretation standard. The Board discussed the need to encompass the specification’s teaching of training to a “voice pattern” of a call assistant group and found that no intrinsic evidence supported the imposition of a temporal restriction on training. The Board then explained that the meaning of “training” had been a “central dispute” during the proceedings and that Ultratec did “have an opportunity to address the issue, which [Ultratec] first raised” prior to the final written decisions. Appx66-69, Appx3676-3680, Appx7415-7418, Appx11220-11224.

Second, the Board rejected Ultratec’s suggestion that secondary considerations were treated as rebuttal evidence. Walking through its obviousness analysis in the final written decisions, the Board recounted that “[o]nly after th[e] discussion of obviousness *** [including secondary considerations] of nearly fifteen pages did we discuss the ultimate conclusion of obviousness of the claimed subject matter.” Appx71-72; *see* Appx3680-3682, Appx7421-7422, Appx11215-11217.

Relatedly, the Board reiterated the reasons for discounting Ludwick’s testimony on CapTel’s commercial success. The Board emphasized that Ludwick’s conclusory comparison of the claimed technology to the CapTel service and devices as a whole, based solely on “personal observations” made during a visit to

a CapTel relay facility, was entitled to little weight. The Board rejected Ultratec's assertion that Ludwick's observations (without corroboration) must be credited. Appx72-73, Appx3682-3683, Appx7422-7423, Appx11217-11219.

Third, concerning claims 8-11 of the '578 patent (IPR2013-00544), the Board clarified its analysis but maintained its conclusion that an ordinary artisan would be motivated to combine Ryan and McLaughlin. Citing Occhiogrosso, the Board explained that combining those references would involve "nothing more than directing the captioned telephone device of McLaughlin to connect to a re-voicing relay, as taught in Ryan, rather than a conventional relay." Appx7419-7420.

Fourth, the Board underscored that in analyzing whether the claims of the '346 patent were obvious (IPR2013-00545), it faithfully applied circuit precedent in finding that one skilled in the art would combine elements of Ryan and Alshawi (as opposed to the references as a whole) to achieve the claimed inventions. The Board further explained that, far from disregarding Ultratec's evidence that the references purportedly teach away from one another, it "considered the reasons identified by the Petition, weighed the testimony of the respective declarants, and considered [Ultratec's] arguments." Appx11219-11224.

SUMMARY OF THE ARGUMENT

This Court should affirm the well-supported decisions of the Board.

I. Ultratec’s lead argument challenges the admission of Occhiogrosso’s expert testimony. But the Board did not err—let alone abuse its discretion—in refusing to exclude that evidence. The Ultratec patents are directed to the field of telecommunications technology, and Occhiogrosso’s thirty-plus years of training and experience in that field—including on voice-and-data transmission projects designed to assist the hearing impaired—make him an expert under any conceivable conception of the pertinent field of art. The Board, exercising its discretion in conducting a non-jury trial, reasonably found (at a minimum) an adequate relationship between Occhiogrosso’s expertise and the Ultratec patents. This Court’s precedent requires no more. Ultratec’s separate argument—that the Board inappropriately shielded from appellate review its denial of Ultratec’s belated request to supplement the record with Occhiogrosso’s testimony from a *different* proceeding—is meritless.

II. The Board’s broadest reasonable construction of the “trained to the voice of the call assistant” limitation, as well as the Board’s associated factual findings with respect to Ryan, should be affirmed. As the Board explained, the claims and the specifications of the Ultratec patents do not specify (i) whether training occurs before or after the voice recognition software is programmed, or (ii) whether training must be to the voice of one (and only one) call assistant, as opposed to a group of call assistants. The language of the claims in no way excludes the

possibility that the software is trained to (for example) a regional accent shared by multiple call assistants; quite the opposite, the specification discloses training to a “voice pattern.” Ultratec’s narrowest possible construction would contravene the broadest-reasonable-interpretation standard.

Ultratec additionally posits that the Board shifted its construction of training between the institution decisions and the final written decisions, thereby depriving Ultratec the opportunity to respond. That is incorrect. Because neither party requested a construction of training during the institution phase, the Board never offered an initial construction from which it could depart; rather, the Board offered a construction in the final written decisions only after the parties’ post-institution patentability arguments made the need for construction clear. By that point, Ultratec had offered its position on the meaning of training both in writing and at the hearing.

The Board’s patentability findings can be affirmed regardless. Substantial evidence supports the Board’s conclusion that Ryan’s reference to “software *** specifically designed to recognize the voice of particular relay agents” encompasses *both* one individual and a group of individuals. And Ultratec’s argument that the Board failed to find that Ryan discloses software trained during coding (per the construction adopted by the Board) misconstrues the record.

III. Ultratec incorrectly asserts that three of the Board’s obviousness findings lack substantial evidence.

First, the Board’s finding with respect to the ’346 patent (IPR2013-00545)—that there was motivation to combine Ryan and Alshawi—is grounded firmly in the record. Crediting Occhiogrosso’s testimony, the Board explained that the references’ shared interest in improving the accuracy of transmitted communications would have led a person of ordinary skill in the art to combine the re-voicing relay disclosed in Ryan with the transmission of both voice and text disclosed in Alshawi. Ultratec’s argument that the combination of these references impermissibly alters Ryan’s “principle of operation” misunderstands the inquiry. Because Ryan does not invite the transmission delay that Ultratec posits, Ryan does not “teach away” from Alshawi.

Second, the Board relied on substantial evidence in finding with respect to claims 8-11 of the ’578 patent (IPR2013-00544) that one of ordinary skill in the art would be motivated to combine McLaughlin and Ryan. Again accepting Occhiogrosso’s testimony, the Board reasonably found that the claimed invention followed from the mere recognition that the accuracy of McLaughlin’s captioned telephone could be improved by connecting it to Ryan’s re-voicing relay instead of a traditional relay. Beyond Ultratec’s misapplication of obviousness law, the

Board had good cause to reject Ultratec's position that the two references could not be combined in the manner proposed.

Third, Ultratec cannot escape the substantial evidence—offered with respect to claims 1-2 of the '314 patent (IPR2013-00540), claims 1-15 of the '482 patent (IPR2013-00541), and claim 7 of the '578 patent (IPR2013-00544)—that supports the Board's findings related to the combination of Wycherley and Yamamoto. The combination of Wycherley's typing call assistant and Yamamoto's teachings on the efficiency benefits of re-voicing speech recognition as applied to a phone operator together pointed to the claimed technology. Ignoring that rationale for combining the references, Ultratec's arguments on appeal place undue weight on parts of the references that are not relevant to the proposed combination and otherwise misread the references to disparage that combination.

IV. Ultratec's arguments relating to secondary considerations are unmoored from this Court's precedent and the record. This Court reviews such findings for substantial evidence, not a heightened standard that Ultratec pulls from a *dissenting* opinion from this Court. Regardless, the Board's finding that Ultratec failed to establish a nexus between the claimed technology and Ultratec's array of "CapTel" products and services cannot be disturbed in light of Ultratec's minimal and conclusory evidence to the contrary. And the record makes clear that the

Board (like CaptionCall’s patentability expert) considered secondary considerations *before* arriving at the ultimate conclusions of obviousness.

V. As Ultratec ultimately acknowledges, binding circuit precedent—which the Supreme Court declined to review after the filing of Ultratec’s principal brief—forecloses its challenges to the constitutionality of the *inter partes* review system.

STANDARD OF REVIEW

This Court “review[s] the Board’s legal conclusions de novo and uphold[s] its factual findings if they are supported by substantial evidence.” *In re American Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1363 (Fed. Cir. 2004). “Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *In re Kumar*, 418 F.3d 1361, 1365-1366 (Fed. Cir. 2005) (citation and quotation marks omitted). As Ultratec acknowledges, “[t]he substantial evidence standard determines whether the decision could reasonably have been made, not whether it was correctly made.” Br. 40 (quoting *Merck & Cie v. Gnosis S.P.A.*, 808 F.3d 829, 840 (Fed. Cir. 2015)). This Court has already rejected Ultratec’s invitation to decline to apply the substantial evidence standard to the Board’s factual findings. *See Merck & Cie*, 808 F.3d 829, *cert. denied*, 137 S. Ct. 297 (2016) (mem.); p. 63, *infra*.

The Board’s evidentiary determinations are reviewed for an abuse of discretion. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1078 (Fed. Cir.

2015). This Court “review[s] the Board’s ultimate claim constructions *de novo* and its underlying factual determinations involving extrinsic evidence for substantial evidence.” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015). Anticipation “is a question of fact reviewed for substantial evidence.” *In re Rambus, Inc.*, 753 F.3d 1253, 1256 (Fed. Cir. 2014). The Board’s conclusion of obviousness is reviewed *de novo*, with underlying factual findings reviewed for substantial evidence. *See Merck & Cie*, 808 F.3d at 833.

ARGUMENT

I. THE BOARD DID NOT ABUSE ITS DISCRETION IN CONSIDERING OCCHIOGROSSO’S TESTIMONY

Ultratec’s lead argument (across all of the related appeals) is that the Board should have excluded the testimony of CaptionCall’s expert, Benedict Occhiogrosso.³ That argument is unavailing. Because lower tribunals are “in the best place to judge” whether a proffered expert “had the knowledge, skill, experience, training, [and] education of a specialized nature that was likely to assist the trier of fact to understand the evidence,” *SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010) (alteration in original) (citations and internal quotation marks omitted), the admission of such testimony will not be disturbed absent an abuse of discretion, *see Sundance, Inc. v. DeMonte Fabricating*

³ For ease of reference, citations in this section are to the record in IPR2013-00540.

Ltd., 550 F.3d 1356, 1360 (Fed. Cir. 2008). Deference is all the more appropriate where, as here, judges serve as the trier of fact. *See Seaboard Lumber Co. v. United States*, 308 F.3d 1283, 1302 (Fed. Cir. 2002) (explaining that “screening function” or “gatekeeping role” employed to prevent jurors from being misled is “of lesser import in a bench trial”). Given the extensive record documentation of Occhiogrosso’s experience and expertise in the field of telecommunications, including technologies applicable to the hearing impaired, Ultratec cannot come close to establishing any error—let alone an abuse of discretion—in the admission of his testimony.

A. Occhiogrosso Was Qualified To Testify As An Expert

1. Occhiogrosso’s extensive telecommunications expertise qualifies him as an expert.

To testify as an expert under Federal Rule of Evidence 702, which applies to *inter partes* review proceedings per 37 C.F.R. § 42.62, a person must “possess[] the relevant expertise in the pertinent art.” *Sundance*, 550 F.3d at 1362. Occhiogrosso qualifies as such a person under any conceivable application of that standard.

As the Board explained, each of the Ultratec patents explicitly “states that the present invention relates to the general field of telephone communications.” Appx18 (citation and internal quotation marks omitted). Certain patents at issue (in this appeal and the other consolidated appeals) instruct that “[t]he

improvements to the relay system and method of operating the relay described herein are applicable to the broad [telecommunications device for the deaf] community *and to all the applications in which a relay is normally used.*” Appx82, ’314 patent col. 3 ll. 17-21 and Appx3692, ’482 patent col. 3 ll. 17-21 (emphasis added); *accord* U.S. Patent No. 7,555,104 col. 3 ll. 57-59. Others teach that “[r]elay voice to text service might *** be useful for any application in which it is desired to supplement voice communications by a text transcription of the voice spoken on the telephone.” Appx7439, ’578 patent col. 3 ll. 59-62 and Appx11233, ’346 patent col. 3 ll. 40-43; *accord* U.S. Patent No. 7,319,740 col. 3 ll. 62-65; U.S. Patent No. 7,003,082 col. 3 ll. 52-55; U.S. Patent No. 6,603,835 col. 3 ll. 54-57. The patents’ disclosure of embodiments reinforces that the relevant telecommunications technology can serve several different purposes:

For example, the voice to text capability of the re-voicing relay makes the use of such a relay attractive for some business purposes, such as creating a text record of a business negotiation or interview session, conducted over or merely in the presence of a telephone. If the call assistant is a simultaneous translator from one spoken language to another, the relay can be used to conduct language translations assisted by text transcriptions.

Appx11236, ’346 patent col. 9 ll. 14-22; *accord* ’104 patent col. 9 ll. 4-14.

Occhiogrosso’s academic training and “more than thirty years of experience in the field of telecommunications and information technology” make him “qualif[ied] *** to give expert testimony on the subject of telecommunications

technologies.” Appx18-19. Occhiogrosso holds a post-graduate degree in electrical engineering, has authored numerous published works, and has served as a public- and private-sector telecommunications consultant since at least 1979. *See* Appx858-868 (*curriculum vitae*); Appx825-828 (declaration providing qualifications); Appx1801-1806 (supplemental declaration providing qualifications). His experience further includes “plann[ing], design[ing], implement[ing], and manag[ing] large scale projects involving wired and wireless communication systems”—some of which required “transmission of voice and data.” Appx18-19.

In particular, Occhiogrosso highlights his work designing a captioning system for live public meetings held by the New York City Metropolitan Transit Authority. That work was “explicitly directed to helping the deaf and hard-of-hearing.” Appx1805-1806; *see* Appx1445-1447, Appx1488-1492 (deposition testimony describing “project manager and *** designer[]” role “overseeing the implementation”); *see also* Appx599 (Ultratec counsel stating that project “did concern deaf and hard of hearing”). In addition, Occhiogrosso recounts designing a “relay service for the [United Nations]” where audio of someone speaking “could be routed to various translators who could then repeat what was being said in another language, and that translated speech could be sent to individuals who needed language assistance to understand the person speaking.” Appx1805. All of

that experience bears directly on the telecommunications technology claimed in the Ultratec patents.

2. *Ultratec's attempt to restrict the Board's discretion to consider Occhiogrosso's testimony fails on both the law and the facts.*

Ultratec asserts (Br. 23) that the relevant field of art should be narrowed to “telecommunications technology specific to the deaf and hard-of-hearing,” and insists that Occhiogrosso was not qualified to testify about that subject matter. That argument fails on multiple levels.

a. The Ultratec patents themselves disclaim any attempt to cabin the claimed technology to the deaf or hard-of-hearing. Those patents (along with those at issue in the other consolidated appeals) teach that “[i]t is envisioned that there are a number of hearing or partially hearing users who would have reason to benefit from voice to text transcription services.” Appx7439, ’578 patent col. 3 ll. 57-59; *accord* ’740 patent col. 3 ll. 59-62; ’082 patent col. 3 ll. 55-59; ’835 patent col. 3 ll. 50-53. They also make clear that the claimed technology “will sometimes be described here by referring to an ‘assisted user,’ who may be deaf or hard of hearing, *but who also may be a normally hearing person who simply wants text assistance for some reason.*” Appx11233, ’346 patent col. 3 ll. 43-47 (emphasis added); *accord* ’740 patent col. 3 l. 65 to col. 4 l. 2; ’082 patent col. 3 ll. 55-59; ’835 patent col. 3 ll. 56-50; *see also* pp. 25-26, *supra*.

Notably, with respect to the testimony of its own expert (Paul Ludwick), Ultratec embraced the Board's view of the pertinent field of art as telecommunications technologies, *not* just services for the deaf and hard-of-hearing. *See* Appx18 (“[Ultratec] indicates elsewhere that the relevant field of art is telecommunication technologies.”); *see also GraftTech Int’l Holdings, Inc. v. Laird Techs. Inc.*, 652 F. App’x 973, 980 (Fed. Cir. 2016) (rejecting attack on expert because “[t]hese are the qualifications that [the movant] alleged an individual should possess to qualify as an expert”). In responding to the *inter partes* review petitions, Ultratec preemptively decried any “attempts to undermine Mr. Ludwick’s expertise”; Ultratec reasoned that “telecommunication technologies *** is the relevant field of art” and that “Ludwick has experience with speech recognition software as it relates to telecommunication technology and specifically telecommunication relays.” Appx176 n.2. Despite the absence of any proffer that Ludwick had experience with deaf or hard-of-hearing systems, Ultratec submitted that “Ludwick’s opinions will ‘help the trier of fact to understand the evidence or to determine a fact in issue.’” *Id.* (quoting FED. R. EVID. 702). Ultratec therefore cannot fault the Board for defining the relevant field of art as telecommunications technologies or cast Occhiogrosso as unqualified in the pertinent art. *See* Appx601 (Ultratec counsel acknowledging that “Occhiogrosso does have experience with

certain aspects of telecommunications relay services”); Br. 28-29 (acknowledging expertise in telecommunications technologies).

That Ultratec’s patents are at times directed to the deaf and hard-of-hearing (Ultratec Br. 24-27) does not mean that the Board abused its discretion in finding Occhiogrosso’s expertise in telecommunications technologies to be relevant and helpful. *See* Appx17-18 (rejecting Ultratec’s “attempt to constrict the ‘pertinent art,’ i.e., the pertinent technology, to a particular subset of individuals who use the pertinent technology”). As the patents plainly disclose, the “advantages” of the claimed work are just “most clear in view of its usefulness *** for the deaf.” *E.g.*, Appx82, ’314 patent col. 3 ll. 20-22; *accord* ’104 patent col. 3 ll. 60-62.

b. Contrary to Ultratec’s assertion (Br. 29-31), it would not be an abuse of discretion to consider testimony even from an expert (unlike Occhiogrosso) who, by his own admission, was not a person of ordinary skill in the art:

Defendants attack Dr. Silva on the grounds that he is not “a person of ordinary skill in the art,” and that he at one point in the proceedings acknowledged that much. Of course that objection is meritless. The “person of ordinary skill in the art” is a theoretical construct used in determining obviousness under § 103, and is not descriptive of some particular individual.

Endress + Hauser, Inc. v. Hawk Measurement Sys. Pty. Ltd., 122 F.3d 1040, 1042 (Fed. Cir. 1997); *see* Appx17 (“[T]o testify as an expert ***, a person need not be a person of ordinary skill in the art, but rather ‘qualified in the pertinent art.’”) (quoting *Sundance*, 550 F.3d at 1363-1364). Such objections simply pose the

question whether the expert “was unqualified to testify as an expert witness at all.” *Endress + Hauser*, 122 F.3d at 1042.

In making that determination, this Court has held on numerous occasions that an expert may testify so long as there is “an adequate relationship between [the expert’s] experience and the claimed invention.” *SEB S.A.*, 594 F.3d at 1373; *see also Bancorp Servs., LLC v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1375 (Fed. Cir. 2004) (holding that expert on “stable value protected investments” was qualified to testify on “variable life insurance policies that included stable value protected investments”); *accord* KENNETH S. BROUN ET AL., *MCCORMICK ON EVIDENCE* § 13 (7th ed. 2016) (“[A] specialist in a particular branch of a discipline or profession is usually not required.”); Appx16 (“We need not find a complete overlap between the witness’s technical qualifications and the problem confronting the inventor or the field of endeavor.”). As applied in *SEB, S.A.* (and described by Ultratec in defense of Ludwick’s qualifications), “an expert qualified in the selection of polymer materials was qualified to testify on the importance of selecting a material for portions of a deep fryer even though he lacked expertise in the art of designing deep fryers.” Appx176 n.2.

As set forth above in the prior section (pp. 25-28, *supra*), ample evidence supports the conclusion that Occhiogrosso’s extensive technical expertise in telecommunications technology is, at a minimum, “adequate[ly] relat[ed]” to

telecommunications technologies for the deaf and hard-of-hearing. *SEB S.A.*, 594 F.3d at 1373. The patents explicitly align themselves with “the general field of telephone communications,” Appx18, and repeatedly acknowledge that relays may be employed to assist those other than the deaf or hard-of-hearing. The Board could not have abused its discretion in taking those statements at face value.

c. At any rate, Occhiogrosso *does* possess expertise in telecommunications technology pertaining to the deaf and hard-of-hearing. As explained above (pp. 26-28, *supra*), Occhiogrosso oversaw implementation of a system for captioning the New York City Metropolitan Transit Authority’s live public meetings, and he designed a translation relay service for the United Nations as well. Ultratec is thus wrong to state—echoing its mistaken arguments to the Board—that Occhiogrosso “has no experience with telecommunications technology for the deaf and hard-of-hearing.” Br. 17, 23, 28; *see* Appx17 (noting Ultratec’s argument that Occhiogrosso “does not have ‘any specific experience’” with systems for the deaf and hard-of-hearing). The record flatly contravenes Ultratec’s central factual premise.

Even if Occhiogrosso’s expertise fell short in some respect under Ultratec’s new hyper-strict standard, reversal would not be warranted. This case does not involve the “unusual situation” presented in *Sundance* where “a district court abused its discretion when it admitted the testimony of a patent law expert

‘[d]espite the absence of any suggestion of relevant technical expertise.’” *SEB S.A.*, 594 F.3d at 1373 (alteration in original) (quoting *Sundance*, 550 F.3d at 1361-1362). There is no question that Occhiogrosso is at least an expert in telecommunications technologies “very familiar with the level of relevant knowledge about the technology at issue that one of ordinary skill in the art would have possessed” at the time of patenting. Appx1806 (declaration). Nor did this case involve a jury trial where the court’s gatekeeping role is of special importance. *See Seaboard Lumber*, 308 F.3d at 1302. Accordingly, the Board appropriately exercised its discretion to hear his testimony and “weigh [it] *** taking into account the extent of his expertise in [more specific] areas.” Appx19; *see also Velandier v. Garner*, 348 F.3d 1359, 1371 (Fed. Cir. 2003) (“It is within the discretion of the trier of fact to give each item of evidence such weight as it feels appropriate.”).

B. The Board’s Evidentiary Determinations Raise No Procedural Fairness Concerns

Apart from the merits of the Board’s decision to consider Occhiogrosso’s testimony, Ultratec contends (Br. 33-35) that the Board shielded certain related evidentiary determinations from this Court’s review in violation of 37 C.F.R. § 1.2, which provides that “all business within the Patent and Trademark Office should be transacted in writing.” That regulation does not help Ultratec.

As a threshold matter, in the context of analogous proceedings, this Court has held that the “in writing” requirement poses no barrier to “conferences between the administrative patent judge and the parties in an interference.” *In re Sullivan*, 362 F.3d 1324, 1328 (Fed. Cir. 2004). There is no reason to treat *inter partes* review any differently or to relieve Ultratec of its responsibility to take the common step of requesting transcription of the Board’s teleconferences. *See* Ultratec Br. 33 n.13; *cf. Li Second Family Ltd. P’ship v. Toshiba Corp.*, 231 F.3d 1373, 1379 (Fed. Cir. 2000) (“It is the responsibility of the applicant to ensure that the substance of any interview with the examiner is included in the written record of the application, unless the examiner indicates that he will do so.”).

In any event, the record makes clear (in Ultratec’s words) that “during a conference call, the Board indicated that it intended to deny [Ultratec’s] Motion [for late submission of supplemental information] and that a written order would follow the conference call.” Appx14386. Although no such order issued initially, the Board confirmed the denial in writing not only in response to Ultratec’s rehearing motion in IPR2013-00550 (at issue in related appeal No. 16-1715), but again when it partially granted Ultratec’s motion to supplement the record with those rehearing documents in all of the related *inter partes* review proceedings currently before this Court. Appx14331-14334. The Board explained that “[s]upplementation *** serves to clarify the record for the benefit of the appeal

because it documents the existence of an event that occurred in all *** proceedings that [Ultratec] indicates it wishes to discuss on appeal.” Appx14334.

Specifically, the record on appeal contains the Board’s written explanation that Ultratec’s belated attempt to submit evidence of Occhiogrosso’s testimony from a *separate* district court proceeding “after discovery and briefing were complete and a month before oral hearing,” improperly labeled as “observations” of testimony, did not meet the requirements governing late submission of supplemental information. Appx14361 (citing 37 C.F.R. § 42.123(b)); *see* Appx14350. Ultratec therefore has no basis for suggesting (Br. 35) that the Board “attempt[ed] to prevent robust appellate review” of its evidentiary rulings by “refus[ing] to complete the record.”

Significantly, Ultratec does not challenge the Board’s explanation that, apart from “purely ministerial function[s],” it has “limited capacity to modify the record after appeal to the Federal Circuit.” Appx14332-14334. Ultratec did not raise the omission of a written order until the Board was divested of jurisdiction and, upon learning of that impediment, took no steps to seek further relief. *See, e.g.,* FED. R. APP. P. 10(e); *Biery v. United States*, 818 F.3d 704, 710-711 (Fed. Cir. 2016) (acknowledging “authority to supplement the record” on appeal). Substantial prejudice does not lie in those circumstances.

II. THE BOARD’S CONSTRUCTION OF THE TRAINING LIMITATION UNDER THE BROADEST-REASONABLE-INTERPRETATION STANDARD AND THE RELATED PATENTABILITY FINDING SHOULD BE AFFIRMED

Ultratec contends that the Board misinterpreted the claim term “trained to the voice of the call assistant,” as used in the four patents at issue here, and that it improperly shifted its construction. Ultratec further contends that the limitation is not disclosed in the Ryan prior art reference. None of those contentions is persuasive.⁴

A. The Board’s Claim Construction Is Correct

1. *The Board properly gave “trained to the voice of the call assistant” its broadest reasonable construction.*

The Board, when conducting an *inter partes* review, must “give a patent claim its broadest reasonable construction in light of the specification of the patent in which it appears.” *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (citation and internal quotation marks omitted). The Board appropriately rejected Ultratec’s attempt to narrow “trained to the voice of the call assistant” to “preclude voice recognition software that is designed or built in advance of implementation at the source code level to the voice pattern of a call assistant” or to “limit[] *** training to the voice of one and only one call assistant.” Appx12.

⁴ For ease of reference, citations in this section are principally to the record in IPR2013-00540. Ultratec makes virtually identical arguments with respect to the ’104 and ’740 patents at issue in the appeals consolidated in No. 16-1708.

The Board reasoned that the specification nowhere “indicate[s] the voice recognition software is trained for the voice of only one call assistant”; to the contrary, it discloses “a speech recognition computer program which has been trained to the voice *pattern* of the call assistant.” Appx11 (citation and quotation marks omitted). As such, the *broadest* reasonable construction is one that includes “training for a type of speech used by a group of people (such as a regional accent) [*i.e.*, a pattern] that could apply to more than one call assistant.” Appx10.

Ultratec emphasizes the definite article “the” in the claims’ reference to “the call assistant,” and cites to language in the specifications describing a “voice recognition software package trained to the voice of *that call assistant*.” Br. 60-61 (citation and quotation marks omitted). Neither of those “indications,” however, is “enough under the broadest-reasonable-interpretation standard to exclude” particular groups or a specific class of call assistants from the scope of the claims. *Veritas Techs. LLC v. Veeam Software Corp.*, 835 F.3d 1406, 1411 (Fed. Cir. 2016). The reference in the body of the claims to “*the* call assistant” signifies only that the same call assistant referenced in the claim preamble as “*a* call assistant”—*i.e.*, one of a class of call assistants—participates at each step. *E.g.*, Appx84, ’314 patent col. 8 ll. 18-36 (emphasis added); *see Convolv, Inc. v. Compaq Computer Corp.*, 812 F.3d 1313, 1321 (Fed. Cir. 2016) (“This reference to ‘the processor,’ referring back to the ‘a processor’ recited in preamble, supports a conclusion that

the recited user interface is ‘operatively working with’ the same processor to perform all of the recited steps.”) (citation omitted). And software that is trained to recognize, for example, a call assistant’s regional accent is capable of recognizing that specific call assistant’s voice, even if others have the same accent or the software could be further refined to a single individual. *Veritas Techs.*, 835 F.3d at 1412-1413 (rejecting proposed distinction “[w]ithout some kind of explanation” about “why it makes a material difference”). The Board’s construction reasonably allows for both. *See* Appx11.

Contrary to Ultratec’s insistence (Br. 61-62), the fact that the claim language does not refer to a “voice pattern,” as disclosed in the specification, does not undermine the Board’s construction. Quite the opposite, Ultratec’s assertion cannot be squared with the basic claim construction principle it touts: “Even under the [broadest-reasonable-construction] standard, ‘the specification is the single best guide to the meaning of a disputed term and usually, it is dispositive.’” Br. 53-54 (quoting *SAS Inst., Inc. v. Complement Soft, LLC*, 825 F.3d 1341, 1347 (Fed. Cir. 2016)). Ultratec’s reading of the patents would impermissibly *exclude* the “voice pattern” disclosure in the general description of the claimed technology. *Cf. PPC Broadband, Inc. v. Corning Optical Commc’ns RF, LLC*, 815 F.3d 747, 756 (Fed. Cir. 2016) (“[C]laims ought to be construed such that their preferred embodiment falls within their scope[.]”).

Ultratec also labels (Br. 60) the Board's reliance on the "voice pattern" teaching unexplained and unsupported. Yet Ultratec does not dispute that speech characteristics of an individual call assistant shared by others would be a "voice pattern." And Ultratec's novel invocation (*id.*) of the Administrative Procedure Act, as compelling the parties to "present[] evidence on what a 'pattern' would mean to a [person of ordinary skill in the art]," misses that the patent is itself intrinsic evidence.

At bottom, Ultratec's mode of construction is predicated on the *narrowest possible* interpretation of the claim term, not its *broadest reasonable* interpretation. Perhaps that is why Ultratec originally asserted in its notice of appeal that the Board should not have applied the broadest-reasonable-interpretation standard at all. *E.g.*, ECF 1-2, at 3, No. 16-1706. Although Ultratec has conspicuously abandoned that argument (presumably in light of intervening Supreme Court precedent), its unchanged construction of "trained to the voice of the call assistant" cannot be reconciled with what Ultratec now concedes is the governing standard.

2. *The Board did not shift its claim construction.*

Ultratec tries another tack (Br. 58): It contends that the Board departed from a previously adopted construction of "trained to the voice of the call assistant," thus depriving Ultratec the opportunity to address patentability under a purportedly new construction "stretched *** to cover software trained to whole groups of

individuals.” The record, however, refutes that contention. The construction applied by the Board did not make a “sudden appearance in the final written decisions,” Br. 55, and Ultratec had a meaningful opportunity to address claim construction and its effect on patentability.

To begin with, the Board could not have deviated from the claim construction in the institution decisions because it did not construe “trained to the voice of the call assistant” at that time. *See* Appx128-131, Appx3768-3775, Appx7516-7520, Appx11310-11316. Instead, presumably because the parties had not then requested any particular claim construction, the Board simply quoted the language of the relevant claim terms. *See, e.g.,* Appx127, Appx133, Appx3766, Appx3777, Appx7512, Appx7522-7523, Appx11306, Appx11320. Indeed, because Ultratec declined to file a preliminary response, and in light of the need to find only a reasonable likelihood that CaptionCall would prevail, there was no cause for the Board to address in detail whether Ryan’s reference to software “designed” for “particular relay agents” covered the claims’ use of “trained to the voice of the call assistant.” *See* pp. 43-45, *infra*. The Board therefore did not initially “adopt[]” an “implicit construction”—let alone an explicit construction—of the disputed term. Br. 55-57.

As such, this case is a far cry from the situation in *SAS Institute*, where reversal was warranted because “the Board [in the final written decision] newly

construed ‘graphical representations of data flows’” in a manner that “varie[d] significantly from its initial interpretation of the term” set forth expressly at institution. 825 F.3d at 1351. Unlike the appellants in *SAS Institute*, Ultratec was not forced to “anticipat[e] that already-interpreted terms were actually moving targets” or “expect that they would have briefed or argued, in the alternative, hypothetical constructions not asserted by their opponent.” *Id.* To the contrary, the Board’s construction in the final written decisions here followed directly from the parties’ arguments regarding individuals and groups. As the Board recounts, the meaning of “designed” (as used in Ryan) and “trained” (as used in the patents) became a “central dispute” when *Ultratec* “first raised” the issue—not “after briefing had concluded”—and therefore was resolved in the final written decision. Appx68-69; *see also* Appx10 (explaining need for construction in light of parties’ disagreement).

It was Ultratec that argued that “designed” and “trained” were not equivalent, and it was Ultratec that emphasized that the challenged claims refer to “*the voice of the call assistant*, i.e., a particular individual.” Appx185-186, Appx3839-3840, Appx7573-7574, Appx11364. At the same time, Ultratec recognized the possibility, as urged by CaptionCall, that “‘specifically designed’ might refer to software that is trained” and that such training may relate to “some identified group of individuals (e.g., the group of agents who work at the call

center, females, individuals with particular accents, etc.).” Appx189, Appx3843-3844, Appx7577-7578, Appx11366-11367. Indeed, Ultratec had already deposed CaptionCall’s expert on the meaning of “trained.” See Appx2651-2654. Yet Ultratec declined to offer any construction of “trained,” relying instead on the bare statement that “[t]rainable software is obviously very different than [designed] hard coded software.” Appx184, Appx3839, Appx7573; see also Appx166-170, Appx3821-3825, Appx7555-7561, Appx11352-11358 (presenting claim construction arguments).

That Ultratec chose in its papers to address only cursorily the issue of whether “trained” excludes groups of individuals does not entitle Ultratec to a do-over. The Administrative Procedure Act “entitles litigants before an administrative agency to timely notice of ‘the matters of fact and law asserted,’” Ultratec Br. 54 (quoting 5 U.S.C. § 554(b)(3)), such that they have a “meaningful *opportunity*” to present or respond to potential arguments, *SAS Institute*, 825 F.3d at 1351 (emphasis added) (citation and quotation marks omitted). The Board made that opportunity available to Ultratec and was “free” to “adopt[] a construction in its final written decision” that resolved the parties’ disagreement using intrinsic evidence from Ultratec’s patents. *Id.*

In any event, to the extent Ultratec felt the need to clarify or supplement its written position on claim construction, it did so during a colloquy with the Board

over whether “training” applies to groups of individuals and whether “Ryan is disclosing something *** different.” Appx459-460. Ultratec thus presented the very claim construction and disclosure arguments that it was supposedly prevented from broaching.

B. Substantial Evidence Supports The Finding That Ryan Discloses Training

1. The Board determined that the “trained to the voice of the call assistant” limitation was previously disclosed by the Ryan prior art reference’s discussion of “software *** specifically designed to recognize the voice of particular relay agents.” Appx687; *see* Appx32. In Ultratec’s view (Br. 62-63), adopting its preferred claim construction—*i.e.*, narrowing the meaning of “trained” to a single individual—would require reversal because the Board failed to find “that *Ryan* actually discloses voice recognition software trained to the voice of an *individual* as opposed to a voice pattern of a group.”

The Board, however, did not “skirt[] the issue of *Ryan*’s disclosure” by “relying on the new and erroneous claim construction.” Br. 63. In addition to rejecting Ultratec’s opposition to Ryan as “not commensurate in scope with the claims,” the Board evaluated Ryan even under Ultratec’s overly narrow construction: “Moreover, we are not persuaded by [Ultratec] that a person of ordinary skill in the art would interpret Ryan as only disclosing software written specifically for a group of people[.]” Appx32. Substantial evidence supports the

Board’s conclusion. *See* Appx687, Ryan col. 4 l. 34 (referring to “particular relay agents”); Appx1822, Appx2821-2826 (Occhiogrosso testimony); *see also* Appx461 (Board suggesting that Occhiogrosso testified that software is “built with the capability to recognize individuals”).

As a result, Ultratec cannot properly rely (Br. 54, 63) on *Pride Mobility Products Corp. v. Permobil, Inc.*, which reversed cancellation of a claim after rejecting the Board’s claim construction only because there was “no evidence of the claim *** element in the relied-on prior art” and “no other Board ruling *** addressed to this element.” 818 F.3d 1307, 1315 (Fed. Cir. 2016). Here, the Board’s analysis of Ryan supports a finding that it disclosed the “trained to the voice of the call assistant” limitation under either party’s construction.

2. Focusing on the temporal aspect of “training,”—*i.e.*, whether “training” can only occur after software coding—Ultratec alternatively offers (Br. 63-67) three reasons that Ryan does not disclose that limitation “[e]ven under the [Board’s] construction.”

First, Ultratec asserts (Br. 64) that the Board “refused to construe [training].” The record contradicts that assertion. The Board explicitly addresses the timing of “training” in a section of the final written decisions entitled “Claim Construction.” Appx9-12 (“Nor will we limit ‘trained to the voice of the call assistant’ to a particular time in which the training must occur or to a particular

manner of training that is not found in the claims nor the Specification.”). Presumably that is why Ultratec elsewhere represents (Br. 58) that “the final written decisions *** introduc[ed] an express construction of the ‘trained’ limitation.”

Second, Ultratec argues (Br. 65-66) that the specifications and the claims of the Ultratec patents make it “unreasonable” for the Board to find that “software may be ‘trained’ at the moment it is built.” That argument takes issue with (rather than accepts) the Board’s claim construction, and does not address the import of Ryan’s disclosure under that construction. In any event, Ultratec does not confront the Board’s explanation, consistent with the broadest-reasonable-construction standard, that neither the claims nor the specifications limit training “to a particular time *** or to a particular manner.” Appx12.

Third, in Ultratec’s view (Br. 66-67), “even if a piece of software may be ‘trained’ at the initial coding stage, the [Board] never makes the required factual finding that *Ryan* discloses such training.” That ignores the Board’s explanation that the term “trained” includes “training during software design,” and that Ryan by its terms discloses “software [that] is specifically designed to recognize the voice of particular relay agents.” Appx22, Appx31 (citation and quotation marks omitted). The Board additionally points (Appx31) to Ultratec’s responses, which quote Occhiogrosso’s explanation that “‘specifically designed’ software ***

‘means that the developers of the software *built into* the software the ability to recognize the voice of a particular agent.’” Appx184-185 (quoting Appx2821-2822); *see also* Appx1822-1824, Appx2651-2655 (declaration and deposition testimony that training “wouldn’t require *** some sort of iterative ongoing training” but “depends very much on the specific algorithm that’s being used”). Beyond Ultratec’s plea (Br. 66) to reweigh that evidence, its argument is premised on the view that training occurs only after coding—*i.e.*, the narrow construction the Board rejected—and thus “is not commensurate in scope with the claims.” Appx31.

III. SUBSTANTIAL EVIDENCE SUPPORTS THE BOARD’S OBVIOUSNESS FINDINGS

Ultratec seeks reversal of several factual findings underlying the Board’s obviousness conclusions. None of Ultratec’s fact-laden challenges surmounts the substantial evidence standard of review.

A. Substantial Evidence Supports The Board’s Finding Of Motivation To Combine Ryan And Alshawi

Ultratec first contends (Br. 67-76), with respect to the ’346 patent (IPR2013-00545), that the Board could not have reasonably determined that one skilled in the art would be motivated to combine Ryan and Alshawi. The record shows otherwise. The Board found that Ryan’s disclosure of a telecommunications relay system and Alshawi’s disclosure of continuous speech-to-subtitles translation

service, taken together, teach or suggest the claimed technology—*i.e.*, a computer-assisted relay system and method for providing text translation of a telephone conversation. Appx11191-11203. The Board then concluded that a person of ordinary skill in the art would have been motivated to combine those references in light of their common goal of improving the accuracy of transmitted communications. Appx11203-11204. That conclusion is well supported.

Specifically, the Board credited Occhiogrosso's testimony that an ordinary artisan would (i) appreciate Ryan's ability to improve "the accuracy of the relay service *** by having the relay agent repeat the voice message of the caller and use speech recognition software to convert the caller's words to a data message to send to the assisted caller"; (ii) appreciate "that, like Ryan, Alshawi was also concerned with accuracy in communication, and recognized that misunderstandings could be reduced by providing both voice and text to a caller"; and thus, (iii) "combine the relay services of Ryan with the transmission of both voice and text in Alshawi to provide both voice of the hearing user and text of the hearing user's words to the hearing impaired user of Ryan's relay." Appx11203-11204; *see* Appx11205 ("We credit Mr. Occhiogrosso's explanation that improved accuracy would result by providing both voice and text."); Appx12698-12722 (Occhiogrosso declaration).

Ultratec's disagreement (Br. 71-73) stems from its view that the references teach away from one another because Ryan (it asserts) invites a delay in the transmission of text to allow for proofreading, while Alshawi favors simultaneous transmission of voice and text. Ultratec's attack is misdirected. Any purported tension between the references results from Ultratec combining the references in a manner not proposed by CaptionCall or adopted by the Board. Based on the evidence presented, the Board found that a person of ordinary skill in the art would have understood Ryan's disclosure of a relay using trained re-voicing software to be useful *without* the supposedly delay-inducing error-correction feature. Appx11205-11206; *see also, e.g.*, Appx12718 (Occhiogrosso declaration). Indeed, as the Board noted, there is no need for the proposed combination to include error correction because the comparative result claimed in the '346 patent does not require error correction. *See* Appx11205; *see also In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) ("It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements.").

Ultratec next faults (Br. 73) the Board's analysis on the ground that combining Ryan without the error-correction feature impermissibly changes the reference's "principle of operation" and intended purpose. Beyond the fact that a determination of a reference's principle of operation is a factual one reviewed for

substantial evidence, *see Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App'x 755, 757 (Fed. Cir. 2015) (citing *In re Mouttet*, 686 F.3d at 1332), Ultratec misunderstands the obviousness inquiry.

When a patent claims a combination of elements found in the prior art, the Board asks “whether the improvement is more than the predictable use of prior art elements according to their established functions,” followed by “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417-418 (2007). The obviousness analysis does not require the Board first to define the “principle of operation” of a reference and then to evaluate whether some elements can be combined with other references without changing that principle. Instead, because “[a] reference may be read for *all* that it teaches, including uses beyond its primary purpose,” the Board is required to look at the elements disclosed in the prior art and determine only whether they can be combined without impairing those elements’ function. *In re Mouttet*, 686 F.3d at 1331-1322 (emphasis added) (agreeing that “eliminating the optical components” of a device used to demonstrate that a patent’s use of electrical circuitry was obvious did not alter principle of operation because “this difference does not affect the operability” of the device).

The Board did so here when it found (citing Occhiogrosso’s testimony) that “revoicing a hearing user’s words by a call assistant to provide text to an assisted user, is completely unchanged in combination,” despite the absence of the error-correction function. Appx12721-12722 (cited in Appx11206). In other words, the relay system performs the same basic functions with or without the error-correction step, and nothing about the error-correction feature of Ryan’s re-voicing disclosure is “unique to its *** implementation.” *In re Mouttet*, 686 F.3d at 1332. That finding makes sense in light of Ryan’s teaching that the “accuracy of the relay service may be improved” by the re-voicing software alone. Appx687, col. 4 ll. 34-38; *accord* Ultratec Br. 9 (“Revoicing *** is more accurate than typing[.]”).

The Board’s obviousness analysis thus tracks *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, which addressed whether two prior art references could be combined without negating the principle of operation of one reference. 825 F.3d 1373 (Fed. Cir. 2016). There, the patent at issue claimed a multi-purpose demolition tool with “quick change” functionality allowing for the convenient removal and replacement of movable demolition blades. *Id.* at 1374-1375. The Court found substantial evidence that the *movable* blades of the first prior art reference could be combined with the quick-change functionality of a second reference without changing the principle of operation, even though the second reference disclosed an *immobilized* blade. That is because the combination

could be accomplished without impacting the quick-change functionality. *Id.* at 1381. In other words, the function of the selected elements of each reference remained unchanged.

Regardless, the premise of Ultratec’s “teaching away” argument is incorrect: Ryan does not “teach[] the desirability of *delaying* transmission of text” in conflict with Alshawi. Appx11206 (citation and quotation marks omitted). The “teaching away” standard is met only where prior art “criticizes, discredits, or otherwise discourages the solution claimed.” Appx11205 (citing *In re Fulton*, 39 F.3d 1195, 1201 (Fed. Cir. 2004)). And even then, the conflict must be specific and irreconcilable. *See Allied Erecting*, 825 F.3d at 1382 (affirming finding against teaching away where one reference “criticized” and “underscored” the “disadvantage” of the “precise structure” disclosed by another reference); *In re Mouttet*, 686 F.3d at 1334 (same where reference signals “fundamental difference” between optical circuitry disclosed in reference and electrical circuitry claimed in invention because reference does not include “any teaching” that invention “‘should not’ or ‘cannot’ be implemented with electrical circuitry”) (citation omitted).

Far short of “emphasiz[ing] the importance of delaying the sending of text,” Ultratec Br. 69, Ryan understands that, while delay is disfavored, any disruption associated with the error-correction feature is so “slight” that customer satisfaction

will nonetheless increase, Appx686, Ryan col. 2 ll. 54-58. Similarly, while Ultratec describes (Br. 70) Alshawi as “stress[ing] the importance of *rapid* transmission,” that reference simply envisions “simultaneous[] *output*” of audio and video whenever the process of translating and overlaying subtitles has been completed, Appx11845, Alshawi col. 3 ll. 51-53 (emphasis added); *see* Appx11843, fig. 2. Further still, Ultratec provides no basis for concluding that the *automatic* error-correction feature set forth in Ryan, Appx686, col. 2 ll. 42-58, Appx689, col. 8 ll. 51-54, performs appreciably slower than Alshawi’s speech-to-subtitles translation system, Appx11845, col. 3 ll. 10-15. Accordingly, no record basis exists for concluding that a person of ordinary skill in the art would lack a motivation to combine Ryan and Alshawi.

B. Substantial Evidence Supports The Board’s Finding Of Motivation To Combine Ryan And McLaughlin

Ultratec next targets the Board’s finding that one of ordinary skill in the art would be motivated to combine McLaughlin with Ryan to render claims 8-11 of the ’578 patent obvious (IPR2013-00544). That finding easily rests on substantial evidence.

Claims 8-11 of the ’578 patent are dependent claims that require the method of operating a captioned telephone service involving a re-voicing relay and trained voice recognition software, set forth in independent claim 7, to be implemented using a two-line captioned telephone device and various transmission protocols or

connection types. Appx7442. Crediting the testimony of Occhiogrosso, the Board found that it would have been obvious to a person of ordinary skill in the art to combine McLaughlin, which teaches all of the limitations of claims 8-11 *except* the relay re-voicing element incorporated from claim 7, with Ryan's disclosure of such a relay. Appx7418-7421. That is because McLaughlin "describes a relay service in which a call assistant or automated equipment mediates telephone calls between a speaking person and a deaf person" and "identifies computerized speech recognition as one type of automated equipment for translating voice to text"; Ryan teaches that "the accuracy of a relay that uses speech recognition software may be improved if a call assistant re-voices the remote user's words into a terminal with voice recognition software designed to recognize the call assistant's voice"; and "combining the teachings of Ryan and McLaughlin to achieve the claimed invention involves nothing more than directing the captioned telephone device of McLaughlin to connect to a re-voicing relay, as taught in Ryan, rather than a conventional relay." Appx7419-7420; *see also* Appx8752-8753, Appx9418-9420 (Occhiogrosso declaration).

None of Ultratec's arguments to the contrary has merit. Ultratec contends (Br. 77-78) that the Board did not adequately explain why a person skilled in the art "who was hunting for ways to automate relay functions" would select the re-voicing feature of Ryan's relay and apply it to the relay in McLaughlin. But that

contention misunderstands the Board’s decision. The Board’s stated reason for combining McLaughlin and Ryan was accuracy, not elimination of the call assistant through automation. Ryan “address[es] the shortcomings” of the “untrained, speaker-independent speech recognition *** used in the voice mail [transcription] application described in McLaughlin,” thereby improving the ability of McLaughlin’s software to “recognize accented *** speech” (Appx8145, col. 26 ll. 61-62) (among other features) through “speaker-dependent speech recognition (e.g., trained to the voice of a particular speaker)” —a technique “well known in the field of speech recognition” and “reflected in Ryan’s teaching.” Appx7419-7421; *see* pp. 37-38, *supra* (discussing Ryan’s disclosure as covering regional accents).

The passage Ultratec cites (Br. 77) from the Board’s decision on rehearing—which references “automated equipment” either “at a relay” (McLaughlin) or “used at a relay” (Ryan)—does not indicate that the Board viewed the combination of the references as solving a problem concerning automation. Instead, the passage recognizes the references’ shared understanding that speech recognition software is useful in the relay context. That Ultratec later offers an alternative argument based on the Board’s “desire to improve the *accuracy* of relay captioning as motivation to combine the references” (Br. 79) only reinforces the strained nature of its automation-based attack.

Ultratec also contends (Br. 79-81) that McLaughlin teaches away from Ryan. Although McLaughlin states that “acceptable speech recognition engines fail to recognize accented, slurred, non-standard, or even conversational speech,” Appx8145, McLaughlin col. 26 ll. 60-62, that statement does not necessitate a finding of teaching away. The Board found that McLaughlin teaches only that *untrained* speech recognition software failed to recognize specific types of speech when used to translate *voice mail* for any incoming *caller* directly to text. Appx7421. By contrast, Ryan contemplates a *call assistant* at the *relay service* using *trained* speech recognition software. Accordingly, McLaughlin does not “unambiguous[ly] teach[.]” (Br. 79-80) that speech recognition “should not or cannot be implemented” in a relay setting. *In re Mouttet*, 686 F.3d at 1334 (citation and internal quotation marks omitted) (affirming rejection of teaching-away argument where reference “suggests that electrical circuits are *** inferior to optical circuitry for certain purposes” but not others).

Ultratec takes issue (Br. 81) with the distinction the Board draws between trained and untrained speech recognition software with respect to McLaughlin. To be sure, McLaughlin does not by its terms refer only to untrained speech recognition software. But as the Board explained, relying on Occhiogrosso, the fact that it was well known in the art that trained software could understand (for instance) accented speech naturally cabins McLaughlin’s statement to untrained

software. Appx7421. Indeed, it would make no sense for McLaughlin to use trained software given that a variety of unknown callers—with very different accents or speech patterns—might leave voicemails needing speech-to-text translation.

Likewise, although McLaughlin does not acknowledge that trained speech recognition would be adequate for use in a relay, Ryan does. To accept Ultratec's argument that McLaughlin itself needed to "teach that [trained speech recognition] would be good enough to be used in a telecommunications relay" would turn the obviousness analysis on its head. "[T]he test for obviousness is what the *combined* teachings of the references would have *suggested* to those having ordinary skill in the art," *In re Mouttet*, 686 F.3d at 1333 (emphasis added), not whether a single reference teaches the claimed invention.

In addition, repeating its "principle of operation" argument with respect to the '346 patent, Ultratec contends (Br. 82-83) that the Board erred in failing to define McLaughlin's "principle of operation" when conducting the obviousness analysis. For the reasons already explained (pp. 48-51, *supra*), Ultratec's "principle of operation" test is misplaced. In both proceedings, the Board identified the relevant elements in the prior art, described how those elements could be combined to arrive at the claimed work without impairing the functionality of either references' contribution, and provided reasons why one

skilled in the art would do so. That is all this Court's precedent requires. In any event, apart from asserting that the Board was required to define McLaughlin's principle of operation, Ultratec does not renew its argument that "combining Ryan and McLaughlin would require a substantial redesign of McLaughlin" or its argument disapproving of the Board's reliance on Occhiogrosso. Appx7420. Accordingly, the ultimate issue of whether McLaughlin's principle of operation would be changed by the proposed combination has not been adequately presented to this Court.

C. Substantial Evidence Supports The Combination Of Wycherley and Yamamoto

Ultratec contends the Board erred in two respects in finding the combination of Wycherley and Yamamoto to render obvious claims 1-2 of the '314 patent (IPR2013-00540), claims 1-15 of the '482 patent (IPR2013-00541), and claim 7 of the '578 patent (IPR2013-00544). Neither comes close to overcoming the substantial evidence standard.⁵

1. Ultratec asserts (Br. 84-85) that the combination of Wycherley and Yamamoto would not result in re-voicing an *entire* message by the call assistant, as required by claims 1-6 of the '482 patent and claim 7 of the '578 patent. The Board's considered rejection of that argument is backed by substantial evidence.

⁵ For ease of reference, citations in this section are to the record in IPR2013-00540.

As the Board explained, “Wycherley’s relay system includes [speech recognition software] *** trained using a voice template, enabling the voice processor to recognize each word uttered by the speaker in a call”; in the event of excessive translation errors, that system gives way to a call assistant who types the caller’s words. Appx43 (citing Appx664, col. 4 ll. 35-56). Yamamoto offered a system in which an operator, as opposed to the caller, uses “voice recognition *** [to] repeat[] the question from the [international caller] user to increase efficiency.” Appx44 (third alteration in original) (quoting Appx699). Given (i) Yamamoto’s recognition of a “continuous speech recognition system driven by a context-free grammar,” (ii) the commercial availability of voice-recognition programs like “Naturally Speaking” by Dragon Systems, and (iii) the references’ shared goal of increasing the efficiency of operator-assisted telephone devices, the Board determined that it would have been obvious for an ordinary artisan “to mix and match the teachings of voice recognition systems used in operator-assisted telephone services as a whole to arrive at the claimed invention”—including verbatim re-voicing. Appx47-48.

Ultratec challenges (Br. 85-86) that finding on the grounds (i) that the call assistant in Wycherley intervenes only when the voice recognition software creates excessive translation errors and only then types the words of the caller; and (ii) that Yamamoto’s re-voicing operator system recognizes only 1,600 words. Those

arguments fundamentally misapply the law of obviousness. The Board's combination of Wycherley and Yamamoto need not include every element of both references for the reasons set forth by the Board: "The pertinent question *** is whether the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art in view of the combined references, not whether the references in the asserted combination individually teach the subject matter of [the] claims[.]" Appx49 (citing *In re Keller*, 642 F.2d 413, 425 (C.C.P.A. 1981)).

The Board's approach is firmly grounded in precedents of both this Court and the Supreme Court. As oft explained, the obviousness inquiry asks "whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole," not (as Ultratec posits) "whether the references could be physically combined." *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc). Put another way, the "flexible approach" to obviousness accepts that "'a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle'" and is not cabined to "combinations of a puzzle element A with a perfectly fitting puzzle element B." *ClassCo., Inc. v. Apple, Inc.*, 838 F.3d 1214, 1219 (Fed. Cir. 2016) (quoting *KSR Int'l*, 550 U.S. at 420). Accordingly, the combination of Wycherley and Yamamoto need not employ a typing call assistant or a lexicon limited to 1,600 words.

Moreover, to the extent Ultratec suggests that Yamamoto's re-voicing operator system would not lead one of ordinary skill in the art to verbatim revoicing, the reference states otherwise. In describing ongoing research, Yamamoto is explicit that "[w]hile initially the lexicon [used for re-voicing] was about 1600 words, expansion of the lexicon is underway in order to reduce the number of unknown words." Appx699. Ultratec overstates (Br. 86) the record in characterizing Yamamoto as necessitating reformulation of the user's question; consistent with Yamamoto's disclosure of an "operator repeating the question from the user," Appx699, Occhiogrosso testified that "the operator would repeat that question" and at no point disclaimed verbatim re-voicing, Appx2752-2753; *see also* Appx10341-10342 (testifying that "initially deployed" vocabulary was 1,600 words but that the limitation was likely "derivative from the application" given that "this algorithm, back then, was more than capable of handling say 10,000 words").

In a similar vein, Wycherley does not teach away from combining elements of the references in the manner proposed. *Contra* Ultratec Br. 87. Although Wycherley seeks to minimize the involvement of the call assistant, the proposed combination focuses on the call assistant's role once excessive errors in automatic translation require human intervention. Wycherley offers the solution of the call assistant typing the spoken words of the caller, but is silent about verbatim re-voicing. Because Ultratec "has not identified where Wycherley criticizes,

discredits, or otherwise discourages” verbatim re-voicing, there can be no teaching away. Appx50; *see* p. 51, *supra*.

2. Ultratec maintains that the Board inadequately explained how the combination of Wycherley and Yamamoto results in voice recognition software “trained to the voice of the call assistant,” as required by all of the claims found unpatentable in view of those references. Br. 88-89. Ultratec’s argument is belied by the Board’s decision. The Board summarized Wycherley as employing “software that is available commercially and trained using a voice template,” Appx43, and agreed (quoting the reference) that the disclosed “relay service uses ‘caller-specific templates to implement speaker-dependent voice recognition directly on the voice of the unimpaired caller,’” Appx45 (quoting Appx664, col. 3 l. 43 to col. 4 l. 56). Likewise, in summarizing Yamamoto’s development of an operator assistance system for international calling, the Board quoted Yamamoto’s teaching of “‘voice recognition *of an operator* repeating the question from the [international calling] user’ to increase efficiency.” Appx44 (emphasis added) (alteration in original) (quoting Appx699).

After noting that CaptionCall’s proposed combination of *those* elements would have been obvious, *see* Appx45, the Board found that combining “Wycherley’s relay service that uses text-to-speech processing and automatic speech recognition with Yamamoto’s voice recognition system used to provide

operator assistance” would disclose the claim limitation that includes the “trained to the voice of the call assistant” element, Appx46-47 (emphasis added). The Board then explained that the combination would have been motivated by the fact that “both references disclose using voice recognition systems to increase the efficiency of operator-assisted telephone services.” Appx47. That detailed analysis satisfies the Board’s obligation. *See In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1335 (Fed. Cir. 2016) (stating that Board’s findings may be affirmed if the Court “may reasonably discern that [the Board] followed a proper path”) (citation and quotation marks omitted). Ultratec’s view that the Board faces a heightened burden of explanation because “software trained to the voice of the call assistant” emerges only when the references are combined (Br. 89) again misapprehends the obviousness inquiry for the reasons just discussed. *See pp. 58-59, supra.*

IV. THE BOARD PROPERLY CONSIDERED SECONDARY CONSIDERATIONS OF NONOBVIOUSNESS

Ultratec asserts (Br. 39-52) that the Board did not properly account for objective evidence of nonobviousness. *See Graham v. John Deere Co.*, 383 U.S. 1 (1966). The record refutes that argument, common to all the appeals before this

Court, at every turn.⁶ The Board carefully and explicitly considered evidence concerning Ultratec’s “CapTel” captioned telephone service and array of telephone devices. Appx2436. The Board found an insufficient connection between CapTel and the Ultratec patents because Ultratec’s briefing offered “no substantive arguments” and its proffered evidence consisted of an anecdotal expert declaration having “little probative value.” Appx55-56. Only after assessing the evidence of obviousness and nonobviousness as a whole, the Board concluded that CaptionCall met its burden of demonstrating unpatentability. Appx54-57, Appx71-73.

1. At the threshold, Ultratec confirms (Br. 22 n.11, 39-40) the futility of its argument by urging a departure from the “substantial evidence” standard of review. Tellingly, it offers in support only a *dissenting* opinion from *Merck & Cie v. Gnosis, S.P.A.*, 808 F.3d 829. The reasoning of that dissent has not carried the day. After the panel majority applied the established substantial evidence standard, this Court declined to revisit the issue. 820 F.3d 432 (Fed. Cir. 2016) (mem.) (denying *en banc* review). So did the Supreme Court in denying certiorari shortly after Ultratec filed its principal brief. 137 S. Ct. 297 (2016). Binding precedent thus bars Ultratec’s Hail-Mary argument.

⁶ For ease of reference, citations in this section are also limited to the record in IPR2013-00540.

2. Ultratec also attacks (Br. 41-45) the weight the Board assigned to evidence of CapTel’s commercial success. Under established precedent, “[f]or objective evidence [of secondary considerations] to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.” *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995); *see* Appx54 (“The burden of showing that there is a nexus lies with [Ultratec].”). In the context of commercial success—the only secondary consideration for which Ultratec attempts to demonstrate a nexus on appeal—a patentee must establish “that the thing (product or method) that is commercially successful is the invention disclosed and claimed in the patent.” *In re GPAC*, 57 F.3d at 1580.⁷

Substantial evidence supports the Board’s view that Ultratec failed to make the requisite showing of nexus. Ultratec provided “no substantive arguments” on nexus in its response, and instead “merely list[ed] various common forms of secondary considerations evidence, without exposition.” Appx55; *see also* Appx472-473, Appx521 (Ultratec counsel agreeing with Board at hearing that “[i]t’s not a lot” and that it “would have been more helpful” if Ultratec had

⁷ For that reason, Ultratec’s general discourse (Br. 5-12, 50-52) on CapTel’s place in the history of the captioned telephone service industry is inapt. Moreover, Ultratec offers no argument as to why its purported evidence of nonobviousness should overcome the overwhelming evidence of obviousness in this case. *See Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1344 (Fed. Cir. 2013) (holding that a strong showing of obviousness cannot generally be overcome by weak evidence of secondary considerations).

provided pincites to declarations). And the attempted nexus analysis by Ultratec's expert (Ludwick) was "based on personal observations" from "his visit to CapTel, Inc.'s relay center in Madison, Wisconsin," and limited to the following "conclusory assertion[]" repeated dozens of times:

I personally observed that the CapTel Service meets this claim element. I further confirmed this from my own knowledge of CapTel Service. This feature of the CapTel Service relay is present when the Service is used with each of the CapTel Phones and has always been included as part of the CapTel Service.

Appx56-57; *see, e.g.*, Appx2436-2444. The absence of any "supporting facts or data" identifying which specific models of CapTel telephone devices embodied a particular patent claim, for example, led the Board to assign Ludwick's testimony "little probative value." Appx56; *see* Appx72-73 (denying rehearing for same reasons); *see also* *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (Fed. Cir. 2016) (patentee must "show[] that the asserted objective evidence is tied to a *specific product*") (emphasis added).

Relying on *PPC Broadband, Inc. v. Corning Optical Communications RF, LLC*, 815 F.3d 734 (Fed. Cir. 2016), Ultratec seeks to rehabilitate its nexus analysis by claiming that commercial success should be presumed. That case is inapposite. There, the Court held that "[w]hen the patentee has presented *undisputed* evidence that its product *is* the invention disclosed in the challenged claims, it is error for the Board to find to the contrary *without further explanation*."

Id. at 747 (emphasis added). Here, CaptionCall submitted evidence disputing Ludwick’s testimony. *See* Appx1839-1843 (Occhiogrosso declaration); Ultratec Br. 42-43. And as just discussed, the Board explained both in the final written decision and the decision denying rehearing that “conclusory assertions” were insufficient to connect particular patent claims to CapTel products or services in the first instance. Appx56-57, Appx72-73.

Ultratec’s argument (Br. 45) thus boils down to a dispute over the weight given to Ludwick’s testimony—including whether the same personal observations used to form his opinions also corroborate them. That assertion refutes itself. In any event, the discretion to make that judgment call rests firmly with the Board. *See In re American Acad.*, 367 F.3d at 1368; *see also* Appx73 (“We did not dismiss this testimony; we found it insufficient.”).

3. Ultratec further insists (Br. 46-48) that the Board was wrong to rely on Occhiogrosso’s testimony on obviousness, which supposedly did not consider secondary considerations. But Occhiogrosso plainly analyzed the evidence of secondary considerations that Ultratec presented. *See* Appx1809-1810, Appx1837-1843 (stating that “it does not appear to me that the materials discussed are tied to the claimed invention” and that any claimed “features and benefits are clearly taught in the prior art”). Accordingly, this case is readily distinguishable from *InTouch Technologies, Inc. v. VGo Communications, Inc.*, where the expert

“fail[ed] to *** consider *any* objective evidence of nonobviousness.” 751 F.3d 1327, 1348 (Fed. Cir. 2014) (emphasis added).

Ultratec nonetheless demands that Occhiogrosso’s discussion of secondary considerations in a supplemental declaration be disregarded because he formed opinions in his initial declaration (that remained unchanged by secondary considerations, *see* Appx1838). Even setting aside the fact that Ultratec’s argument again goes to the weight of evidence, *see In re American Acad.*, 367 F.3d at 1368, it makes no sense. A petitioner in an *inter partes* review cannot know at the time it submits a declaration in support of institution what (if any) evidence of secondary considerations a patentee may advance. *See* Appx1841 (Occhiogrosso stating that there “was little, if any, evidence of any secondary considerations of non-obviousness when [he] authored [his] first declaration”). There is no warrant for forcing petitioners to “work in the dark *** to negate every conceivable *** theory” regarding nonobviousness. *Medtronic, Inc. v. Mirowski Family Ventures, LLC*, 134 S. Ct. 843, 849-850 (2014).

4. Lastly, in reaching its ultimate conclusions of obviousness, the Board did not impermissibly treat secondary considerations as rebuttal evidence or otherwise shift the burden of persuasion onto Ultratec. *Contra* Br. 48-50. The Board’s detailed and straightforward explanation on this point in the decisions denying rehearing follows directly from the record. For example:

[I]n Section II.E of our Final Decision [on the '314 patent], we determined the scope and content of the asserted prior art. And we discussed the claimed subject matter relative to the asserted prior art, which included identifying differences between the claimed subject matter and the prior art in the context of the ordinary level of skill in the art and included a determination that [CaptionCall], with support of its declarant, had articulated a sufficient reason to support a conclusion of obviousness. In Section II.E, we also analyzed [Ultratec's] secondary considerations of nonobviousness. Only after that discussion of obviousness in Section II.E of nearly fifteen pages did we discuss the ultimate conclusion of obviousness of the claimed subject matter.

E.g., Appx71 (internal citations omitted).

The statements from the final written decisions on which Ultratec relies do not undermine that conclusion. In summarizing its analysis on the scope and content of the asserted prior art, and the differences between the claimed subject matter and the prior art, the Board noted that CaptionCall “has articulated a sufficient reason to support a conclusion of obviousness.” Appx53. But a mid-analysis observation that there is support for a conclusion of obviousness is not itself a finding of obviousness. *See, e.g., Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1052 (Fed. Cir. 2016) (en banc) (agreeing with district court that jury could have found motivation to combine and only thereafter considering secondary considerations). The Court need not look any further than the passage of the final written decisions that immediately follows: it sets forth the Board’s understanding that “[f]actual inquiries for an obviousness determination *include* secondary considerations.” Appx54 (emphasis added).

Nor does the fact that the Board “balance[d]” the evidence of obviousness against the evidence of nonobviousness at the conclusion of its entire analysis, Appx57, indicate that secondary considerations were an “afterthought.” Ultratec Br. 49. Quite the opposite, it shows that the Board withheld judgment until all of the evidence had been studied. *See George M. Martin Co. v. Alliance Mach. Sys. Int’l LLC*, 618 F.3d 1294, 1306 (Fed. Cir. 2010) (affirming finding of obviousness upon “[b]alancing all of the secondary considerations” against “strong evidence of obviousness”). Proceeding in that manner “g[ave] objective indicia its proper weight and place in the obviousness analysis.” *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1357-1358 (Fed. Cir. 2013).

V. PRECEDENT FORECLOSES ULTRATEC’S CONSTITUTIONAL CHALLENGES

Ultratec closes by seeking to “preserve[]” certain challenges—invoking Article III and the Fifth and Seventh Amendments—to the constitutionality of the *inter partes* review system. Br. 92-93. Ultratec concedes, however, that “the Court has foreclosed similar arguments in *MCM Portfolio LLC v. Hewlett-Packard Co.*, 812 F.3d 1284 (Fed. Cir. 2015), which were also applied in *Cooper v. Lee*, No. 2015-1483, 2016-1071.” Br. 92. After the filing of Ultratec’s principal brief in this appeal, the Supreme Court denied certiorari petitions in both cases. *See MCM Portfolio LLC v. Hewlett-Packard Co.*, 137 S. Ct. 292 (2016) (mem.); *Cooper v. Lee*, 137 S. Ct. 291 (2016) (mem.). This Court’s binding precedent,

which indisputably forecloses Ultratec's constitutional arguments, thus remains undisturbed.

CONCLUSION

This Court should affirm the decisions of the Patent Trial and Appeal Board.

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December 23, 2016

CERTIFICATE OF SERVICE

I hereby certify that on this date, I electronically filed the foregoing with the Clerk of the Court of the United States Court of Appeals for the Federal Circuit using the appellate CM/ECF system. Counsel for all parties to the case are registered CM/ECF users and will be served by the CM/ECF system.

Dated: January 4, 2017

/s/ Pratik A. Shah
Pratik A. Shah

CERTIFICATE OF COMPLIANCE

1. The Court granted Ultratec's motion for leave to file an extended opening brief of up to 20,000 words. ECF No. 63. This brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B) and Federal Circuit Rule 28(c). The brief contains 14,996 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii) and Federal Circuit Rule 32(b).

2. This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6). The brief has been prepared in a proportionally spaced typeface using Microsoft Word in 14-point Times New Roman type style.